NPIC/D-84-64

12 MAY 1964

MEMORANDUM FOR: Assistant Deputy Director (Intelligence) for Management

SUBJECT : Research and Development Project Approval Request for Modification to [redacted] 25X1
Point Transfer Device and for Incorporation of [redacted] 25X1
[redacted] Readout Electronic [redacted] 25X1

REFERENCE : DDCI Memo ER 63-8121, dated 23 December 1963: Approval of Research and Development Activities

In compliance with paragraph 5.b. of the reference, approval is 25X1
requested for the modification to [redacted] existing contract 25X1
covering the [redacted] Point Transfer Device in the amount of 25X1
[redacted] It is also requested that a new contract be negotiated 25X1
[redacted] for incorporation of Readout 25X1
Electronics [redacted]
as outlined in Annex "A".

[redacted] 25X1

ARTHUR C. LUNDAHL
Director
National Photographic Interpretation Center

APPROVED:

Declass Review by NIMA / DoD

/s/
Paul A. Borel
Assistant Deputy Director (Intelligence) for Management

13-5-64
Date

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25X1

NPIC/P&DS [redacted] (11 May 1964)

GROUP 1
Excluded from automatic downgrading and declassification

Research and Development
Project Approval Request

I. Identification

This project covers the installation of encoders and associated electronics along with the improved alignment and higher precision mechanical components required to incorporate a comparator mensuration capability in the [redacted] Point Transfer Device now under contract. 25X1

The Development Branch of Plans and Development Staff proposes to enter into firm fixed price contracts [redacted] 25X1
25X1 [redacted] This project is carried in the third quarter, Quarterly Review of Fiscal 1964 Development Program as item 20.

II. Objectives

This Development will result in the [redacted] Point Transfer Device having broad additional capabilities as a highly versatile stereo-comparator approaching accuracies of 3 microns over distances under 1 mm. and 4 microns over distances up to 20 mm. The [redacted] encoders provide a least count of 1 micron. This accuracy combined with the standard ultra-high resolution optics and the capability to accommodate roll film are expected to assist TID considerably in their efforts to solve current operational mensuration problems. The associated electronics [redacted] are to take the output signal from the [redacted] encoders and feed the data on-line to the computer on operator command. 25X1 25X1 25X1

III. Background

Changing operational requirements and changes in mensuration philosophy within TAB/TID have made it expedient to incorporate a precision comparator capability into the [redacted] Point Transfer Device presently being fabricated at the vendor's plant. The rugged base casting and precision screws and ways chosen [redacted] are intrinsically well suited for comparator applications. Ideally, an ultra-high precision comparator should, from its conception, be designed from "the-ground-up" for that purpose alone; however, there is an urgent requirement for a stereo-comparator, with high resolution optics, capable of effectively utilizing film in roll form. R & D lead times do not permit a new development with an early enough delivery date to meet current requirements; therefore, it is deemed expedient to incorporate comparator capabilities into the [redacted] Point Transfer Device. 25X1 25X1 25X1

IV. Technical Specifications

25X1 The [redacted] Point Transfer Device will be modified to incorporate an Automatic Comparator - Mensuration capability. This system will employ four (4)
25X1 Dynamic Research [redacted] encoders directly attached to $2\frac{1}{2}$ mm pitch, precision ground, ball lead screws on all four (4) axes. These encoders provide 2,500
25X1 counts per revolution, or a one micron bit size (least count) [redacted]

25X1 [redacted]

25X1 The majority of the cost of the [redacted] proposal is for modifying the castings and other components to accommodate the encoders and for the ultra-precise alignment of the ways and screws to obtain the specified accuracies.

All counters, displays and readout/recording equipment will be provided
25X1 [redacted] as GFE [redacted] proposed
25X1 contract [redacted] will install the electronics in the Point Transfer
25X1 Device to insure that proper working relationship are maintained between the electronic readout and Point Transfer Device.

V. Contract and Financial Arrangements

This project will be accomplished under a fixed price contract
25X1 [redacted]
The [redacted] contract is covered by a price redeterminable (downward only) clause and could ultimately result in lower cost. Since the required modifications to the Point Transfer Device are to be made during the initial
25X1 fabrication [redacted] no other contractors were considered for that contract.

The electronics [redacted] have been previously
25X1 developed under an earlier contract and are not available elsewhere as shelf items to fit this requirement.

VI. Coordination

This development has been coordinated with the Technical Analysis Branch of the Technical Intelligence Division with respect to comparator requirements and with the Collateral Support Division regarding requirements for on-line operation.

25X1